DOCUMENT RESUME

ED 403 229 SP 037 087

TITLE	Collegial Investigations: Shared Inquiry through Disciplined Discussion and Action Research.
INSTITUTION	Appalachia Educational Lab., Charleston, W. Va.
SPONS AGENCY	Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE	94
CONTRACT	RP91002002
NOTE	65p.
AVAILABLE FROM	Appalachia Educational Laboratory, Inc., P.O. Box 1348, Charleston, WV 25325-1348; (800) 624-9120.
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	*Action Research; *Collegiality; *Critical Thinking; Elementary Secondary Education; Group Activities; Methods Research; Operations Research; *Staff Development; *Teacher Collaboration; *Teamwork; Theory Practice Relationship; Thinking Skills
IDENTIFIERS	*QUILT (Staff Development Program)

ABSTRACT

This manual was developed in response to teachers' requests for help in maintaining focus and resolving questions and concerns arising out of the Questioning and Understanding to Improve Learning and Thinking (QUILT) program. The introduction describes collegial investigation as a structural process that groups can use to examine problems, issues, or proposals. Two major concepts--the postulate and the collegium--are fundamental to the design of the collegial investigation, and two distinct scaffoldings--critical thinking and action research--guide its functioning. Success depends on three norms: collegiality, practical inquiry, and knowledge. The collegial investigation uses a framework for action research that deploys members in one of five investigating teams: (1) philosophers who read and reflect upon selected pieces from journals and books; (2) analysts who identify and analyze data sources; (3) surveyors who formulate questions which they pose to selected audiences via survey forms or interviews; (4) people watchers who observe individuals and groups in specified contexts; and (5) storytellers who solicit stories from their colleagues and reflect on their own experiences. Sections of the paper explore patterns for critical thinking and the roles and responsibilities of the investigating teams. Also included are forms for investigators' notes and pages for journal keeping. (ND)

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Collegial Investigation

Shared Inquiry Through Disciplined Discussion and Action Research

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Collegial Investigation

Shared Inquiry Through Disciplined Discussion and Action Research

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This publication is based on work sponsored wholly or in part by the Office of Educational Research and Improvement, U. S. Department of Education, under contract number RP91002002. Its contents do not necessarily reflect the views of OERI, the Department, or any other agency of the U. S. Government.

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Foreword

We first conceived and formulated the collegial investigation as the basic design for the second year of a long-term staff development program intended to help teachers improve classroom questioning processes. Year 1 of the program, known as Questioning and Understanding to Improve Learning and Thinking (QUILT), establishes the knowledge base on effective questioning and provides for demonstration, practice, and feedback specific to discrete questioning behaviors. Usually, a school-based program, QUILT offers support for individual growth and development over the course of an entire school year.

A 1991-92 field test of QUILT documented changes in the questioning behaviors of QUILT-trained teachers; however, many of these teachers asked for a second year to help them maintain their focus and resolve questions and concerns related to the use of certain QUILT behaviors. The collegial investigation—with its emphasis upon reasoned discussion and hands-on research—was conceived as a vehicle for encouraging teacher questioning and thinking around major concepts embedded in the basic QUILT program.

QUILT adopters quickly found other uses for the collegial investigation. An elementary school faculty in Tullahoma, Tennessee, adapted this process for use in their SACS accreditation study. Another Tennessee school adapted this process and used it in a school climate project. More importantly, these and other faculties who engaged in collegial investigations related to improving classroom questioning reported a high level of satisfaction and success in using the process.

User adaptation of the process prompted us to consider how we might modify the design to make it more generic. The collegial investigation seemed to hold potential as a method of shared inquiry for a wide variety of problem solving and decisionmaking purposes. This manual has been designed as a support for the process of collegial investigation. Use it for your own purposes, with credit to AEL, the sponsoring organization. Please share the results with us so we can continue learning.

Jackie Walsh
Beth Sattes

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The Process of Collegial Investigation

Introduction

The collegial investigation is a structured process that groups can use to examine problems, issues, or proposals. This multiphased process occurs over time, the time frame dependent upon the nature and complexity of the subject under investigation. Two major concepts are fundamental to the design of the collegial investigation—the **postulate** and the **collegium**. Additionally, two distinct scaffoldings guide its functioning—one to facilitate **critical thinking**; the other, to structure **action research**. Finally, successful operation of a collegial investigation depends upon participants' commitment to three core **norms**: collegiality, practical inquiry, and knowledge that results from "understandings based upon thought, study, and experience" (Paul, 1990).

Under what circumstances might a group choose to organize a collegial investigation? Whenever and wherever the following conditions are met:

1. A situation emerges that affects or interests a significant number of its members.
2. The situation generates divergent, conflicting viewpoints.
3. Leaders determine member involvement and participation in solution-finding to be either necessary or desirable.

The following are illustrative of the kinds of situations that might occasion a collegial investigation: A problem or issue emerges; a new policy, program, or practice is proposed; or a study on a particular topic is mandated.

When a decision is made to launch a collegial investigation, the organizers should be very clear about the purpose of the proposed investigation. Is the purpose to involve the ultimate decisionmakers in a shared inquiry? Is the purpose to move the decisionmakers toward consensus? Is the purpose to afford a representative group of stakeholders a more complete view of the nature of a problem or issue? Is the purpose to invite such a group of stakeholders to make a recommendation regarding a course of action? All of these are legitimate purposes; in fact, a collegial investigation is appropriate whenever widespread input to problem analysis and solution-finding is potentially beneficial. After the purpose

of the proposed investigation is clearly articulated, the work of organizing the collegial investigation begins.

Postulate

The initial task is to prepare the postulate that will drive the investigation. **A postulate is a declarative statement that clearly and succinctly expresses a presupposition, hypothesis, or principle central to the subject of the proposed investigation.** A well-crafted postulate makes a statement that:

1. focuses attention upon one carefully delimited subject,
2. embodies a core aspect of the subject,
3. evokes divergent reactions and opinions,
4. invites individual reflection and group deliberation,
5. can be elucidated by information and data, and
6. communicates meaning in a complete and unambiguous manner.

The postulate should be carefully formulated, critiqued, and edited.

Collegium

The postulate serves as a focal point for the work of the collegium. **Collegium is used here to refer to the special setting in which individuals actively seek a greater understanding of the postulate and ultimately draw conclusions regarding its validity.** The collegium can help "overcome the limitations of individual rationality" (Shulman, 1989, p. 251). While members of a collegium do not necessarily need to reach consensus, each must be committed to the value of sharing knowledge, working together, and talking openly. Further, they must be willing to use two scaffoldings to organize their work: the pattern for critical thinking and a framework for action research.

Critical Thinking

Critical thinking helps facilitate reasonable discussions and wellreasoned analyses by the collegium. The conceptual framework adopted for the collegial investigation defines critical thinking as thinking that:

- is disciplined and self-directed;
- demonstrates mastery of certain intellectual skills; and
- emphasizes the art of thinking about one's thinking so as to enhance one's thinking by making it more clear, more correct, or more defensible.

The pattern for critical thinking, explicated on pages 11-20, incorporates a set of traits or personal qualities exhibited by critical thinkers as well as a set of skills which critical thinkers intentionally use. At the center are eight elements of reasoning, which serve as referents for monitoring thinking (Paul, 1990, p. 567).

Collegium members review the traits and skills of critical thinkers early on, and they practice using the elements of reasoning during group deliberations and discussions. Additionally, they employ them as they continue their inquiry—individually and in small groups—outside formal sessions of the collegium. The pattern for critical thinking draws from the work of Richard Paul and colleagues at the University of Sonoma, California. Use of the pattern gives form to the work of the collegium and helps it realize the potential described by Shulman (1989):

> *If any individual actor's capacity to learn is bounded, if human reasoning of all kinds—theoretical, practical, or moral—remains restricted when pursued alone or without access to competing points of view, then the collegium is indispensable as a vehicle for education reform.* (p. 251)

By using critical thinking as a scaffolding for their work in the collegium, members can confront "competing points of view" and can expand and enhance their "capacity to learn."

Action Research

The collegium depends upon dual knowledge sources: (1) members' open exchange of experiential learnings developed over the course of their careers and (2) knowledge derived from the identification, collection, and analyses of information external to the collegium. The collegial investigation uses **a framework for action research that deploys members into one of five investigatory teams, each of which focuses upon a discrete information source.** Investigators include: (1) philosophers who read and reflect upon selected pieces from journals and books; (2) analysts who identify and make sense of existing data sources—ranging from attendance records to board minutes; (3) surveyors who formulate questions which they pose to selected audiences via survey forms or interviews; (4) people watchers who observe individuals and groups in specified contexts; and (5) storytellers who reflect on their own experiences and craft stories that relate to the postulate and who solicit stories from their colleagues. Each of these investigatory teams analyzes the information or data they collect and attempts to draw inferences that shed light on the postulate. As the teams perform their work, individually and in group sessions, they look to the pattern for critical thinking—and especially to the elements of reasoning—as they draw inferences from the information and data. Ultimately, each team brings the evidence it collects back for the collegium's consideration.

Norms

A collegial investigation is a dynamic and fluid process that is highly sensitive to the personality of the collegium and the postulate which it addresses. While the process itself is flexible, prerequisite to any given collegial investigation's success is member acceptance of three nonnegotiable norms. The first is the **norm of collegiality** which implies an equal status community of learners who value and learn from one another's divergent experiences and points of view. Implicit in this norm is an understanding that members will communicate openly, listen respectfully, and work collaboratively one with another.

A second essential norm is a belief in the **value of practical inquiry** which is defined as research undertaken by practitioners to improve their practice (Richardson, 1994). All phases of a collegial investigation are

imbued with some form of practical inquiry: During a discussion within the collegium, members draw on personal reflections regarding individual educational, professional, and life experiences; during action research, team members collect and analyze data related to the defined postulate; and throughout the process, individuals experience "ah-ha's" in the context of their daily work. All three are forms of practical inquiry which gives credibility and value to front-line practitioners in curious pursuit of new learnings. The importance of elevating practical inquiry to the level of an operative norm in schools and other organizations cannot be underrated. As Morimonto (1973) argues:

> *When change is advocated or demanded by another person, we feel threatened, defensive, and perhaps rushed. We are then without the freedom and the time to understand and to affirm the new learning as something desirable and as something of our own choosing. Pressure to change, without an opportunity for exploration and choice seldom results in experiences of joy and excitement in learning. (p. 255)*

The collegial investigation provides a mechanism "for exploration and choice;" the collegium itself, "the freedom and time to understand and to affirm. . . new learning[s]."

The third essential norm is **knowledge**. Both collegiality and practical inquiry value knowledge borne of thought, study, and experience. During a collegial investigation, members defer final judgment until they have explored, examined, and analyzed varied types of information. Action research generates the raw material, the "evidence," which the collegial members weigh using the elements of reasoning. As they think together, they make meaning out of the diverse, sometimes conflicting, information collected through their research. Essential to the work of the collegium is the shared belief that knowledge emerges from the work of sound and critical thinking. Information can be packaged and presented to the collegium; information it remains until individuals actively think about and justify it. Through this thinking, collegial members are able to construct knowledge that will elucidate the postulate.

The Multiphased Process

A collegial investigation encompasses a number of complex processes and countless discrete activities. Depending upon the complexity of the subject and the context of the investigation, it might be scheduled over a three-week or a three-month time period. Whatever the time frame, the collegium must provide for four major phases.

1. **Problem definition** occurs during the initial session of the collegium and results from discussion and deliberation framed by the pattern for critical thinking.

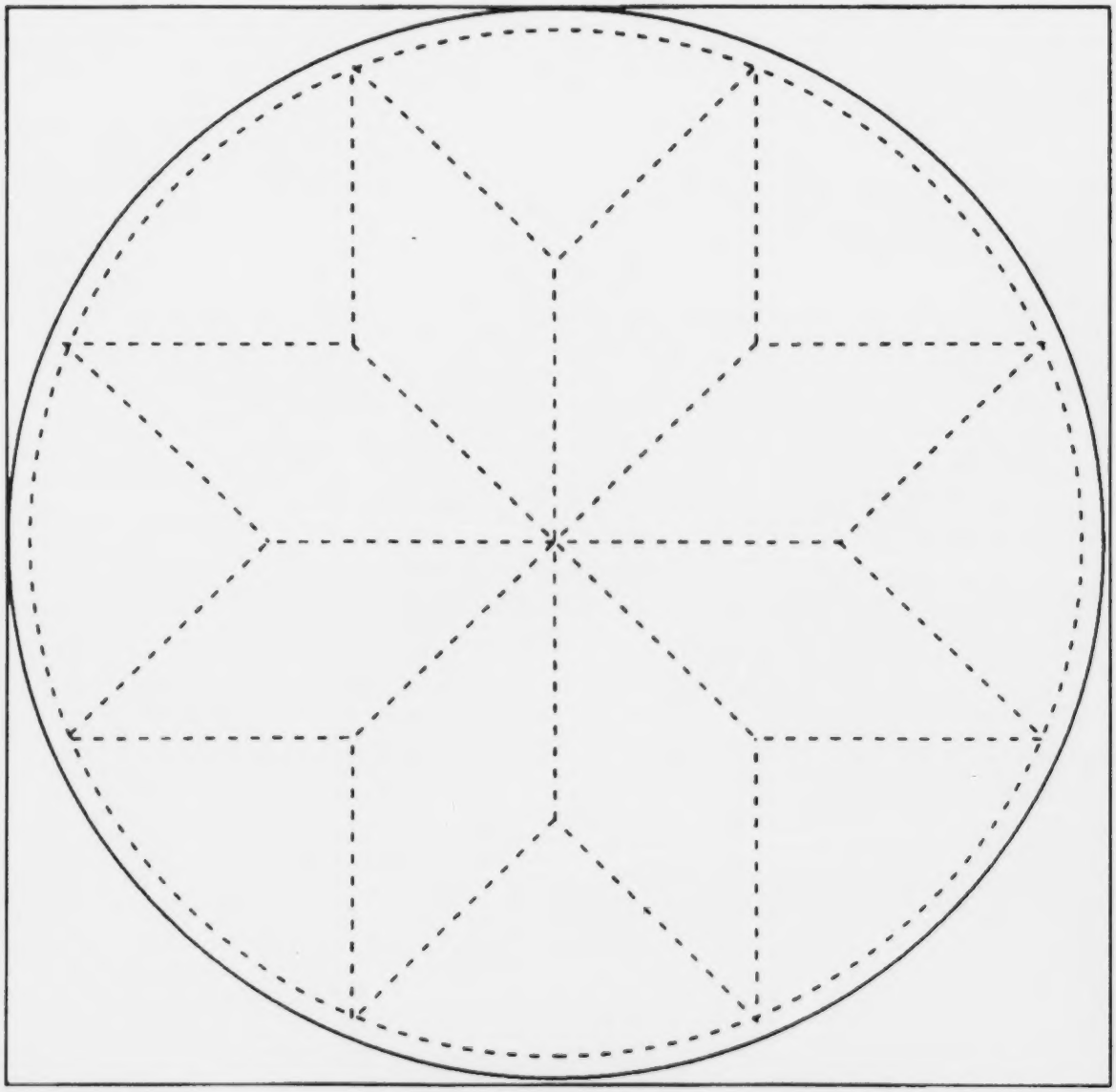
2. **Information gathering** is conducted by action research teams and individual members thereof outside the formal sessions of the collegium.

3. **Information analysis** is initially undertaken by each action research team in the context of small group deliberation and leads to the drawing of inferences from the information that the team has gathered.

4. **Conclusions** are reached during the concluding session(s) of the collegium as participants receive and evaluate different evidentiary sources.

Throughout each of these phases, collegial investigators rely upon the pattern for critical thinking and the potential of action research. Collegiality, practical inquiry, and pursuit of knowledge are the fuels that drive the engine of the collegial investigation.

Pattern for Critical Thinking



Overview

Certain identifiable characteristics distinguish critical thinking from "everyday" thinking. When we think critically, we are intentional in our efforts to focus, discipline, and exercise control over our own thought processes. Our "everyday" thinking, on the other hand, tends to be scattered, undisciplined, and associational in nature. When we succumb to this natural tendency of "allowing our minds to wander" from one idea to another in no particular pattern, we fail to use our human potential to think about our own thinking.

This is the essence of critical thinking—that we think about our thinking and hold ourselves to specific standards as thinkers. The pattern for critical thinking used in the collegial investigations is adapted from the work of Richard Paul and associates at The Center for Critical Thinking, University of Sonoma, California. This pattern includes three templates: (1) a set of traits associated with critical thinkers, (2) essential elements of reasoning, and (3) a set of skills associated with critical thinking.

This three-part pattern—traits of critical thinkers, elements of reasoning, and skills for critical thinking—can assist us in our work of analyzing or evaluating arguments, interpretations, beliefs, or theories. Rather than carelessly agreeing or disagreeing with a conclusion based on our preconceptions of what is true, we can use analytic tools to understand the reasoning behind the conclusion. When analyzing arguments, we can recognize the importance of asking for reasons and considering other views. This approach can help us become more sensitive to possible strengths or weaknesses of arguments with which we disagree. If we aspire to apply critical thinking in our dialogues and discussions, we must be keenly aware of the differences between evidence and interpretation; we must explore the assumptions on which interpretations are based; and we must propose and evaluate alternative interpretations for their relative strength.

The pattern for critical thinking is a tool for use in analysis and evaluation of selected issues, problems, and alternatives. Its three templates are interdependent but, viewed in isolation, afford us sets of criteria by which to measure our thinking.

Affective Traits of Critical Thinkers: Attitudes and Values Essential to Critical Thinking

The **traits** are the attitudes and values possessed by individuals who attempt to think critically. We might say that these traits predispose individuals to critical thinking. They are the habits of thought that characterize critical thinkers.

Most of us do not come by these traits automatically; we develop a commitment to these habits of mind because of our background, training, experience, and personal encounters. These traits are prerequisite to the acceptance of the elements of reasoning as a structure for one's approach to critical thought.

A. **Independent thinking or thinking for oneself.** Critical thinkers do not passively accept the beliefs of others; rather, they try to figure things out for themselves. They thoughtfully form principles; they do not mindlessly accept those presented to them. They are not limited by accepted ways of doing things. They do not accept as true, or reject as false, beliefs they do not understand. They are not easily manipulated. Critical thinkers strive to determine for themselves when information is relevant, when to apply a concept, or when to make use of a skill. They are self-monitoring; they catch their own mistakes; they don't need to be told what to do every step of the way.

B. **Fairmindedness.** Critical thinkers consider the strengths and weaknesses of opposing points of view. In a disagreement, fairmindedness allows one (1) to look at things from the point of view of someone who disagrees and (2) to try to agree with at least a portion of what the other party believes. Critical thinkers are not egocentric or sociocentric. Egocentric thinkers believe that the way they see things is exactly the way things are. Egocentricity is an inability or unwillingness to consider others' points of view. In the extreme, it is characterized by a need to be right about everything, an all-or-nothing attitude, and a lack of self-consciousness of one's own thought processes. When egocentric tendencies extend to a group, it has evolved into sociocentricity. "Group think" results. This can be seen in both children and adults:

> "My school (religion, country, race, etc.) is better than yours."

Traits of critical thinkers

- Independent thinking or thinking for oneself
- Fairmindedness
- Awareness of the connection between thoughts and feelings
- Intellectual curiosity
- Intellectual humility
- Intellectual courage
- Intellectual good faith
- Intellectual perseverance

"He's a democrat, so he must be right."

"How could they live that way?"

Uncritical thinkers often confuse loyalty with always supporting and agreeing with the position taken by individuals and groups with whom they are associated.

C. **Awareness of the connection between thoughts and feelings.** Critical thinkers realize that their feelings are their emotional response to a situation. They understand that their feelings would be different if they had a different understanding or interpretation of the situation. They recognize that thoughts and feelings, far from being unrelated, are two aspects of their responses.

D. **Intellectual curiosity.** Critical thinkers are curious about their environment. They are filled with questions about the world—seeking explanations and offering solutions.

E. **Intellectual humility.** Critical thinkers recognize the limits of their knowledge. They know the difference between really knowing something and merely believing without good reason. They are sensitive to their own biases and prejudices. Critical thinkers distinguish what they know from what they don't know. They are not afraid of saying "I don't know" when they are not in a position to be sure.

F. **Intellectual courage.** Courage is necessary for honestly questioning deeply held beliefs. Critical thinkers understand that popularly held beliefs can be false and misleading. They have the courage to explore unpopular ideas, beliefs, and viewpoints. They understand that dangerous or absurd ideas sometimes have merit and can be rationally justified even though the easy route would be to dismiss them without consideration.

G. **Intellectual good faith.** Critical thinkers try to act on what they believe. They understand there is often a gap between ideals and practice; they work to minimize these gaps.

H. **Intellectual perseverance.** Becoming a critical thinker requires time and effort. Critical thinkers are willing to pursue intellectual insights and truths in spite of difficulties, obstacles, and frustrations. They recognize the need to struggle with confusion and unsettled questions over time in order to achieve deeper understanding and insight. They recognize that significant change requires patience and hard work.

Elements of Reasoning

Reasoning is thinking that is conceptual and inferential; it is thinking that attempts in some intelligible way to figure something out. Richard Paul associates eight elements of reasoning with this type of thinking and argues that these essential dimensions of reasoning are present whenever and wherever reasoning occurs. Together, these elements give definition to reasoning and provide a general logic for its use. This is to say that the eight elements can be used as a guide by those of us who commit to rational thought. If we wish to reason correctly, we will attend to each one of these eight as we proceed in our thinking.

Purpose. This constitutes the "why?" of our reasoning. Toward what end or objective is our reasoning or thinking directed? What need are we attempting to fulfill as a result of our thinking about an issue?

Question at issue. This is the focus of our reasoning, the "what is the problem, anyway?" Whenever we attempt to reason something out, there is at least one question at issue or one problem to be solved. It is critical that we be able to articulate the question or questions—to know what they are and how many there are.

Concepts. Language—the words and phrases that we use to communicate—can strongly influence our thinking about a given issue. Concepts are specialized terms that embody ideas and understandings; we use them in discourse and sometimes allow them to drive our reasoning. When we are reasoning about a particular problem or issue, it is important that we be able to define clearly the concepts and ideas that we use in our reasoning and also that we understand correctly the principles and rules that are embodied in these concepts.

Assumptions. These are the beginning points in our reasoning and consist of those things that we take for granted. Whatever the question at issue, we bring some presuppositions or assumptions to our reasoning about it. It is important that we always be able to state clearly the assumptions that we are making about a given issue prior to the beginning of our formal thinking about it. Having stated the assumptions, we can then determine if they are clear, correct, justifiable, necessary, and consistent.

Point of view. This refers to "where we are coming from" as we engage in reasoning about a particular problem or question. Our point of view, or frame of reference, regarding a particular question is usually

biased or colored to some extent by who we are, what we value, what we do, what experiences we've had, and so forth. It is essential that we be able to describe our point of view vis-a-vis a particular issue or problem in a complete and accurate manner. It is also important that we recognize how this frame of thinking influences our thinking. Sensitivity to others' points of view enables us to dialogue with them more productively.

Evidence. As Sergeant Friday would say, here we are after "Just the facts, Ma'am." Evidence is the information, data, and experiences that we use in our reasoning. These are the facts that we use to think about the issue at question. This is also called "the empirical dimension of reasoning."

Inferences and conclusions. These are the "if this, then that" steps that we make in our reasoning. They result from our interpretation and treatment of the evidence and concepts related to the question at issue. As we examine concepts and evidence, we think: "Because this is so, that also is so (or probably so)" or "Since this, therefore that." As we think through a problem or question, we will make a number of inferences leading up to the conclusion itself. Inferences are the "mini-conclusions" we reach along the way to the ultimate resolution of the question at issue.

Consequences and implications. These are the "So what?" or logical outcomes of the conclusions we reach. They are what follow from our interpretation of the particular issue or problem at hand. We can think of a consequence as something that will happen if the conclusion or solution we reach is implemented. Implications are related statements or ideas that we must also accept if we hold to a particular conclusion.

Elements of reasoning

- Purpose
- Question at issue
- Concepts
- Assumptions
- Point of view
- Evidence
- Inferences and conclusions
- Consequences and implications

Cognitive Skills and Abilities for Critical Thinking

In order to incorporate each of the eight elements into our thinking, we must master and use specific skills of critical thinking. Each of these skills represents a certain cognitive ability. The pattern for critical thinking employed in the collegial investigations focuses upon eighteen such skills. As we attempt to enhance and increase our use of critical thinking, we can work on developing and using these skills at the automatic level.

1. **Avoid oversimplifications.** Critical thinkers can see the difference between useful simplifications and misleading oversimplifications. The uncritical thinker often oversimplifies and as a result misrepresents problems and experiences. What should be recognized as complex, intricate, ambiguous, or subtle is viewed as simple, elementary, clear, and obvious. For example, it is an oversimplification to view people or groups as **all good** or **all bad**, actions as **always right**, one contributing factor as **the cause**, etc., and yet, such beliefs are common. Critical thinkers try to find simplifying patterns and solutions, but not by misrepresentation or distortion.

2. **Develop one's perspective.** Critical thinkers learn to recognize that their own ways of thinking are some combination of insight and error. They develop these points of view through a critical analysis of their experience. They question commonly accepted ways of understanding things and avoid uncritically accepting the viewpoints of their peers or society. To do this, they create and explore their own beliefs, reasoning, and theories.

3. **Clarify issues, conclusions, or beliefs.** Before discussing, evaluating, or solving a problem, it helps to be completely clear about what is at issue. Understanding should always precede judgment.

4. **Clarify meaning of words.** Critical thinkers understand concepts and can supply examples—not just a definition—to demonstrate their understanding.

5. **Develop evaluation criteria.** Expression of "preference" is no substitute for evaluation. In order to truly and fairly evaluate,

one must develop and use criteria or standards. Critical thinkers are aware of the values on which they base their judgments.

6. **Evaluate the credibility of sources of information.** Critical thinkers recognize the importance of using reliable sources of information. They give less weight to sources that either lack a track record of honesty, are not in a position to know, or have a vested interest in the issue. Critical thinkers recognize when there is more than one reasonable position to be taken on an issue; they compare alternative sources of information, noting areas of agreement; they analyze questions to determine whether or not the source is in a position to know; and they gather more information when sources disagree. They realize that preconception influences observation—that we often see only what we expect to see and fail to notice things we aren't looking for.

7. **Question easily and deeply.** Critical thinkers are nothing if not questioners. The ability to question and probe deeply, to get down to root ideas, to get beneath the mere appearance of things, is an essential skill. They use questions to better understand what others think, to help develop new ideas, to explore implications, or as a prelude to evaluating ideas. Critical thinkers welcome good questions as an opportunity to develop a line of thought.

8. **Read critically.** Critical thinkers read with a healthy skepticism. But they do not doubt or deny until they understand. They clarify before they judge. Critical thinkers ask themselves questions as they read, wonder about the implications of, reasons for, examples of, and meaning and truth of the

Skills of critical thinking

- Avoid oversimplifications
- Develop one's perspective
- Clarify issues, conclusions, or beliefs
- Clarify meaning of words
- Develop evaluation criteria
- Evaluate the credibility of sources of information
- Question easily and deeply
- Read critically
- Listen critically
- Compare and contrast ideals with actual practice
- Examine or evaluate assumptions
- Distinguish relevant from irrelevant
- Make plausible inferences, predictions, or interpretations
- Give reasons and evaluate evidence and alleged facts
- Recognize contradictions
- Explore implications and consequences
- Think precisely about thinking
- Note significant similarities and differences

material. They realize that everyone is capable of making mistakes and being wrong, including authors. No two authors would write the same book or write from exactly the same perspective. Critical readers recognize that reading a book is reading one limited perspective on a subject and that more can be learned by considering other perspectives.

9. **Listen critically.** Active and critical listening is a complex and important skill that requires time and practice. Key questions are essential for good listening: "I'm not sure I understand you when you say..., could you explain that further?" "Could you give me an example of this?" "Let me see if I understand you. What you are saying is .... Is that right?"

10. **Compare and contrast ideals with actual practice.** Self-improvement and social improvement are presupposed values of critical thinking. Critical thinkers try hard to see themselves and others accurately. This requires recognizing gaps between ideals and practice. This strategy is intimately connected with "intellectual good faith."

11. **Examine or evaluate assumptions.** We are in a better position to evaluate any reasoning or behavior when all of the elements are made explicit. We base both our reasoning and our behavior on beliefs we take for granted. We are often unaware of these assumptions. Only by recognizing them can we evaluate them. Critical thinkers have a passion for truth and for accepting the strongest reasoning. Thus, they have the intellectual courage to seek out and reject false assumptions. They realize that everyone makes some questionable assumptions. They are willing to question, and have others question, even their own most cherished assumptions. They consider alternative assumptions. They base their acceptance or rejection of assumptions on their rational scrutiny of them. Independent thinkers evaluate assumptions for themselves, and do not simply accept the assumptions of others, even those assumptions made by everyone they know.

12. **Distinguish relevant from irrelevant facts.** To think critically, we must be able to tell the difference between those facts that are relevant to an issue and those that are not. Critical thinkers

focus their attention on relevant facts and do not let irrelevant considerations affect their conclusions. Whether or not something is relevant is often unclear; relevance must often be argued. Furthermore, a fact is only relevant or irrelevant in relation to an issue. Information relevant to one problem may not be relevant to another.

13. **Make plausible inferences, predictions, or interpretations.** Thinking critically involves the ability to reach sound conclusions based on observation and information. Critical thinkers distinguish their observations from their conclusions. They look beyond the facts, to see what those facts imply. Critical thinkers recognize their tendency to make inferences that support their own egocentric or sociocentric world views and are therefore especially careful to evaluate inferences they make when their interests or desires are involved.

14. **Give reasons and evaluate evidence and alleged facts.** Critical thinkers can take their reasoning apart in order to examine and evaluate its components. They know on what evidence they base their conclusions. They realize that unstated, unknown reasons can be neither communicated nor critiqued. They are comfortable being asked to give reasons; they don't find requests for reasons intimidating, confusing, or insulting. They can insightfully discuss evidence relevant to the issues or conclusions they consider. Not everything offered as evidence should be accepted. Evidence and factual claims should be scrutinized and evaluated. Evidence can be complete or incomplete, acceptable, questionable, or false.

15. **Recognize contradictions.** Critical thinkers strive to remove contradictions from their beliefs. They attempt to be consistent between word and deed. Critical thinkers can pinpoint specifically where opposing arguments or views contradict each other, distinguishing the contradictions from compatible beliefs.

16. **Explore implications and consequences.** Critical thinkers can take statements, recognize their implications, and thus develop a fuller understanding of their meaning. They realize that to accept a statement one must also accept its implications. They can explore both implications and consequences at length.

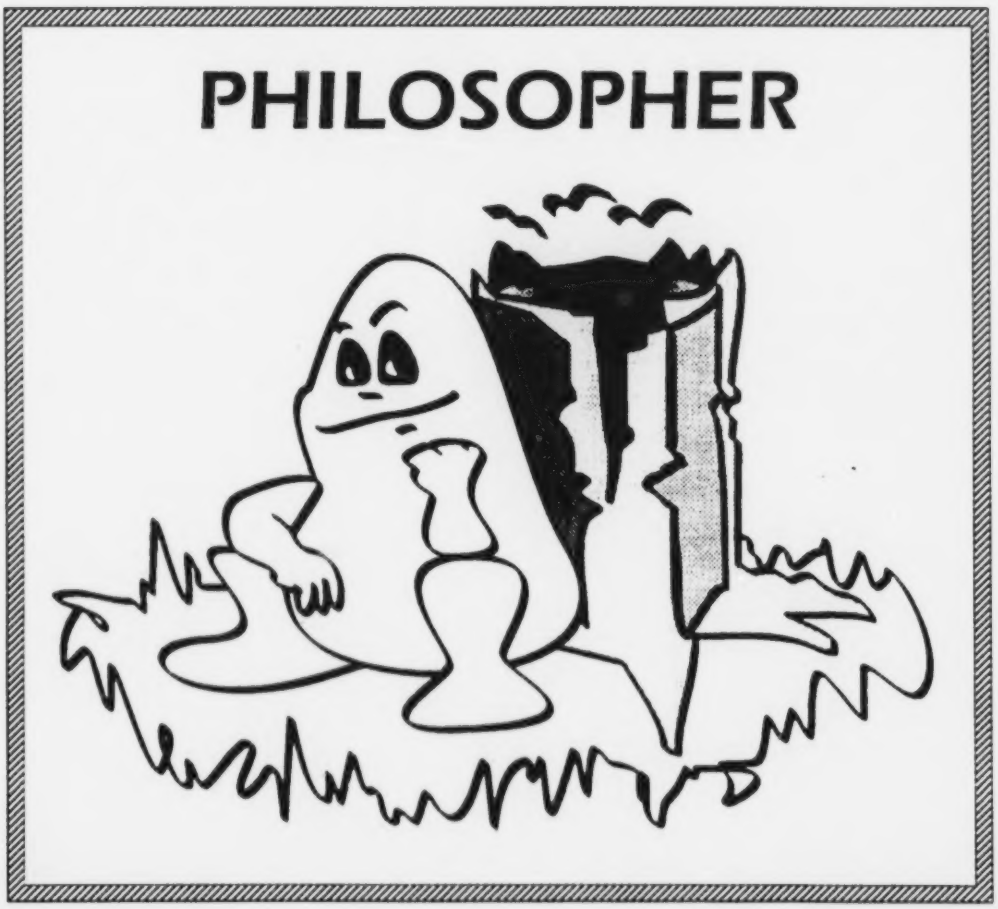
When considering beliefs that relate to actions or policies, critical thinkers assess the consequences of acting on those beliefs.

17. **Think precisely about thinking.** One definition of critical thinking is "the art of thinking about your thinking while you're thinking in order to make your thinking better: more clear, more accurate, more fair." Critical thinkers can analyze thought—take it apart and put it together again.

18. **Note significant similarities and differences.** Critical thinkers strive to treat similar things similarly and different things differently. Uncritical thinkers, on the other hand, often don't see significant similarities and differences. Things superficially similar are often significantly different. Things superficially different are often essentially the same. Only through practice can we become sensitized to significant similarities and differences. As we develop this sensitivity, it influences how we experience, how we describe, how we categorize, and how we reason about things. We become more careful and discriminating in our use of words and phrases. We hesitate before we accept this or that analogy or comparison.

PHILOSOPHERS:

Roles and Responsibilities



Purpose and Focus

The philosophers' job is to review "expert opinion" related to the questions at issue in the postulate. To this end, they will critically read selections that may include articles from professional journals, excerpts from books, research reports, and other related publications. Their purpose in reading is to analyze, interpret, and critique their sources in such a manner as to make an evaluation of their validity and worthwhileness to the collegium. From those sources that are judged worthy, the philosophers will glean facts and arguments related to the postulate. Ultimately, the philosophers will synthesize their findings and make inferences, as appropriate, for report back to the collegium.

Organizers of the collegial investigation will ordinarily prepare a portfolio of readings for the philosophers following a review of current literature including searches of ERIC files, recent professional books, and other sources. Philosophers should not feel limited by the materials provided; rather, they are encouraged to extend their reading by browsing in their own or their school's professional library, inquiring of colleagues as to pertinent literature, and following up on interesting citations in bibliographies of sources provided to them. The philosophers may choose to "divide the labor," assigning each member a limited number of sources for critical reading and review.

Methods and Procedures

Two primary tools are available to the philosophers: (1) critical reading and (2) shared inquiry and discussion with their colleagues. Critical reading is active and demanding (Adler, 1983). Essential to critical reading is the reader's active engagement through the continuous asking of questions about the content and the author(s). Routinely, critical readers will pose such questions as: "What is the author's point of view or perspective?" "Does this perspective explain why certain facts and concepts are included (and emphasized), and others are excluded?" "What can I imply from what the author has written?" "What reasons and examples does the author provide to support a particular position?" (Paul, 1990). Mortimer J. Adler offers sound advice on "how to read a book" in a book by this very title; a summary of Adler's suggestions appears on p. 25.

Following individual reading and notetaking, philosophers will want to come together as a team to share reactions and "new learnings" and to analyze their findings. In this meeting they will first share individual reading experiences and then think together about their diverse findings. Certainly, philosophers will benefit by referring to the eight elements of reasoning as they proceed in their discussions.

Outcome

From their critical readings, personal reflections, and team discussion, philosophers will make sound inferences that relate to the questions at issue. They should link these inferences to the factual base for each. Additionally, the philosophers may wish to prepare a critical synthesis of their readings which reports what exactly they derived from each source and how reliable they judge the source to be. The team should decide how to present their findings to the collegium. A written report is not necessary—nor is an extensive review of the readings. The idea is to highlight the cogent findings in a memorable manner and, most importantly, to use them in discussion as the collegial group attempts to reach conclusions regarding the postulate.

From the bookshelf: *How to Read a Book*, by Mortimer Adler

Suggestions for Critical Reading

1. **Analyze the structure**
   - First, skim the article or book to get a sense of the whole.
   - Then, examine the identifiable parts to see how they fit together.
   - Finally, ask yourself how each part adds to the meaning of the whole.

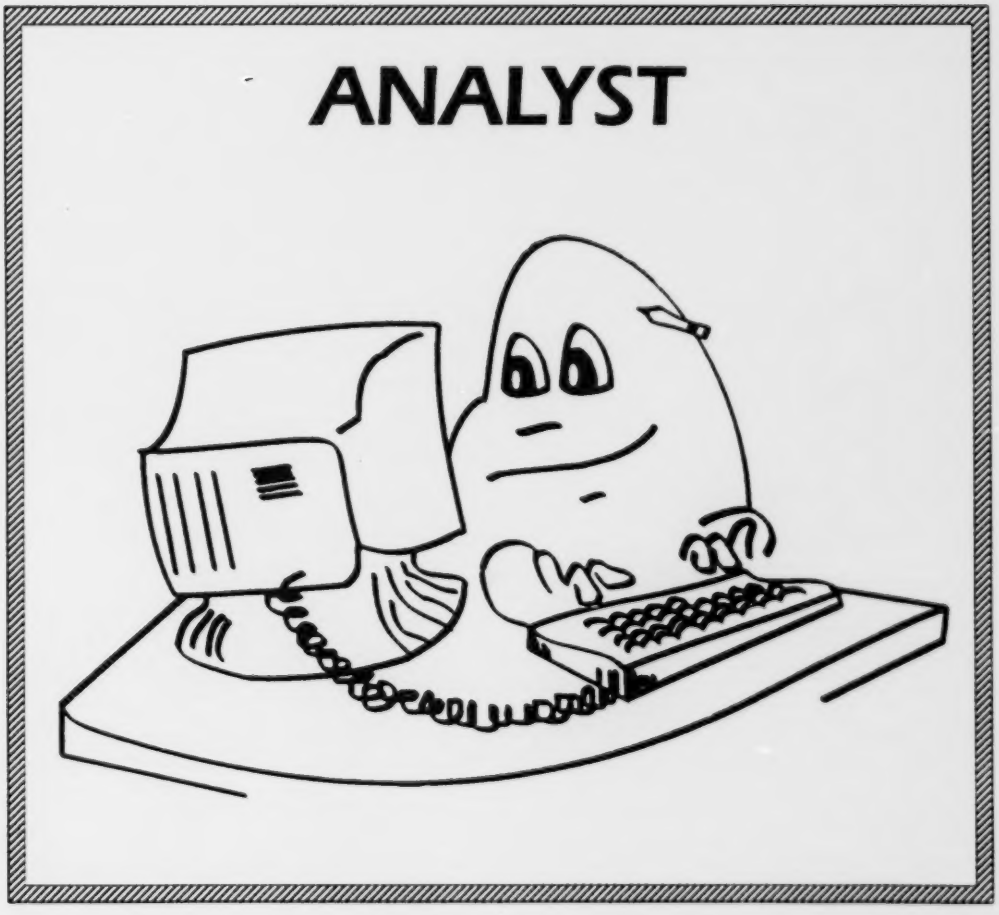
2. **Interpret the contents**
   - First, identify the author's "vocabulary."
   - Next, figure out what exactly the author intends when using these words and concepts. Be sure your definition or understanding matches.
   - Then, identify the author's main propositions, contentions, or conclusions.
   - Now, figure out how the author supports these; follow the line of reasoning or argumentation.
   - Finally, identify any unsolved problems or lingering questions.

3. **Critique the reading**
   - First, ask yourself if the author appears to be misinformed or uninformed about any topic. Are the facts straight?
   - Then, consider the author's reasoning. Are there any errors in reasoning? (Refer to the elements.)
   - Finally, decide whether you think the author makes a complete case. Does the analysis or argument seem to stand on its own?

Source: *How to Read a Book*, by Mortimer J. Adler, New York: Simon and Schuster, 1972.

ANALYSTS:

Roles and Responsibilities



Purpose and Focus

The responsibility of the analysts is to identify existing information and data sources that may shed light on the postulate and to analyze these in manners that will allow them to draw meaning and inferences. Analysts draw from both statistical records and reports as well as narrative documents. They may access already computerized or otherwise aggregated data files, or they may take on the task of aggregating data not previously treated. The analysts' focus is upon historical or archival records associated with their school, agency, or organization.

Methods and Procedures

Analysts will select methodologies appropriate to the information or data type being examined. Various statistical procedures are available for treatment of numerical data; however, this action research team will most likely use fairly simple, low level analyses including summaries, means, and ranges. Additionally, the analysts can use some type of concept or thematic analysis in their review of narrative documents such as board minutes, curriculum guides and policy manuals. At times, analysts may simply study findings presented in previously conducted studies.

This action research team's work will be greatly enhanced by their attention to an all-important skill of critical thinkers: distinguishing relevant from irrelevant facts. As they begin the work of identifying relevant sources, they will be challenged to think divergently in order to identify the universe of candidate sources. However, as their work proceeds, they must eliminate sources that merely **seem** to have relevance to the questions at issue and focus upon those that are directly connected. Likewise, as they continue with their analyses, they need to keep their antennae up in an attempt to discriminate among relevant and just "interesting" factoids. Data are overwhelming. The challenge is to plow through the mounds of existing data and see that which is directly pertinent. This will more likely be accomplished when the analysts work together in a collegial and collaborative manner.

Outcome

Analysts are really about drawing inferences from the raw data and information sources that they examine. This requires arduous thinking. An inference can be defined as a step of the mind, an "intellectual act" wherein one concludes a particular thing to be so because of some tangible and verifiable other thing (Paul, 1990, p. 553). After analysts distinguish the relevant from the irrelevant, they are then called upon to figure out just what the relevant facts have to say about the questions at issue. In the "figuring out," they develop the inferences that they will take back to the full collegium.

from the bookshelf: *Renewing America's Schools* by Carl Glickman

Glickman's book includes a chapter on "The Critical-Study Process: Making the Most of Important Information" which is particularly relevant to the work of the analysts. Of special interest is Glickman's summary (p. 51) of data sources which he presents in three classifications:

- **conventional sources**—readily available in almost every school; little time needed for retrieval and analysis
- **additional sources**—data can be collected in most schools with a little extra effort
- **creative sources**—must be developed first and require a major effort to use

Following is a modification of a chart presented by Glickman (p. 52) containing sources that might be useful to the analysts.

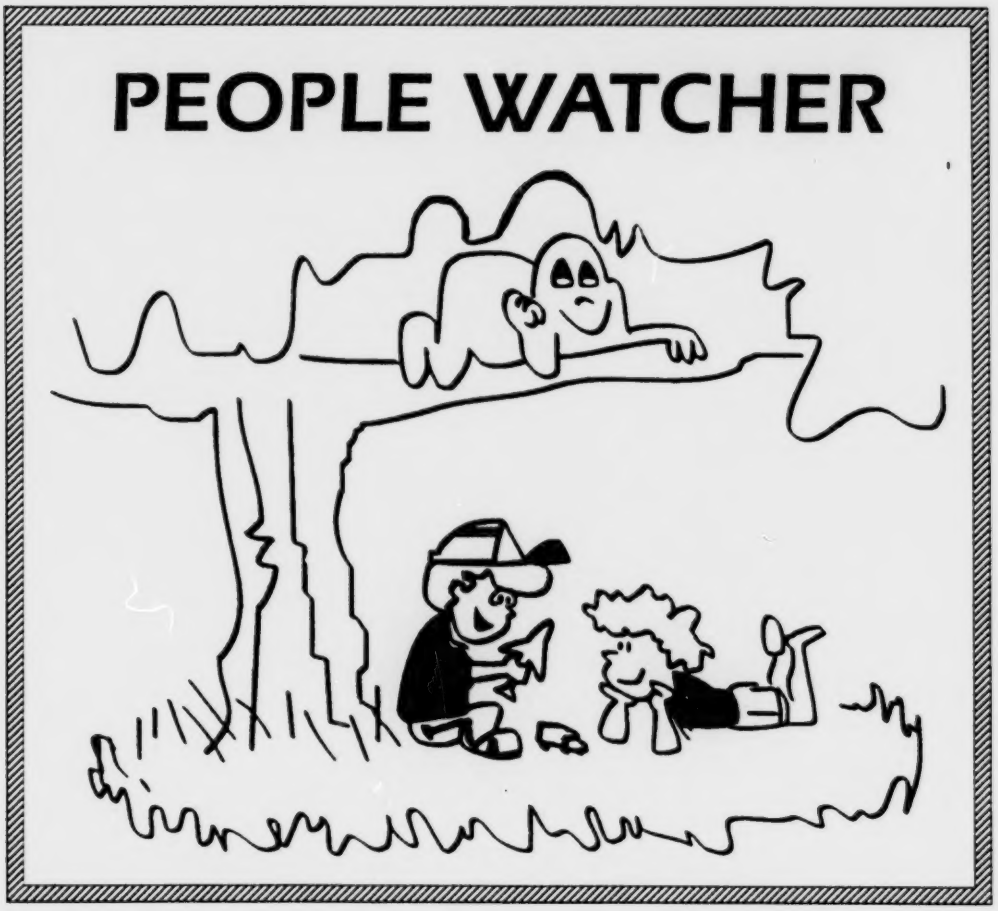
Conventional	Additional	Creative
Attendance rates	School materials used outside school	Student exhibits
Dropout rates	Books read, essays written	Student portfolios
Retention rates	Writing samples	PTA projects
Referrals for discipline	Student progress beyond school	
Test Scores		
Number/percentages of students in special programs		

Analysts could certainly add to Glickman's list or create similar lists that would include district, community, state, and other specialized considerations.

Source: *Renewing America's Schools*, by Carl D. Glickman, San Francisco: Jossey-Bass Publishers, 1993.

PEOPLE WATCHERS:

Roles and Responsibilities



Purpose and Focus

The people watchers are designated as the active observers within the collegium. Their mission is to identify the individuals and groups whose behaviors might speak loudly regarding the questions at issue for the postulate under consideration. Primary among these should be students—for they are or should be central to all educational inquiries. Additionally, and dependent upon the postulate itself, people watchers may decide to focus attention upon teachers, parents, administrators, graduates, and/or community members. Most often, people watchers will conduct "shadow studies"; that is, they will observe their subjects in action. Obviously, this action research team will need to agree upon the context for their observations as well as the questions they hope to answer as a result of the watching which they do.

Methods and Procedures

People watchers have five major considerations as they structure their research: (1) What questions might they be able to answer by watching client groups? (2) What individuals and groups will be most relevant to the questions raised? (3) When and how will they observe selected groups? (4) What kind of record will they make of their observations? (5) How will they go about analyzing and making meaning of their observations?

The first task is to question deeply regarding the human dimension of the postulate. What might stipulated behaviors of different groups have to say about the postulate? In what contexts—settings and activities—will the subjects' behaviors be most revealing? What kinds of questions might be answered by observing these identified groups? People watchers will need to generate the list of questions as they plan for their observations.

Next, the people watchers will need to segment the identified groups for observation purposes. For example, if students are a target group: What ages and grade levels will be selected? Will gender, achievement levels, ethnicity, or other special characteristics be considerations in the observations? This action research team will also need to determine how many observations are enough, and which team members will conduct which observations. The observation schedule will detail who will

observe identified groups for what purposes under what set of circumstances.

Team members should also agree upon a standard for recording their observations. In some instances, observers may take a checklist or some other prepared form to their observations; in other cases, they may decide to take informal notes; and, in still other instances, they may decide to write down their impressions following the observation. The important points here are that team members agree in advance as to the preferred method of documentation, and that all observers use the same procedures. In special cases, this action research team may decide to videotape a particular group in a certain context. They could then play back the scenario so that all members of the team could observe and share impressions. An alternative would be for pairs of observers to work together so that they might discuss their impressions after the observation.

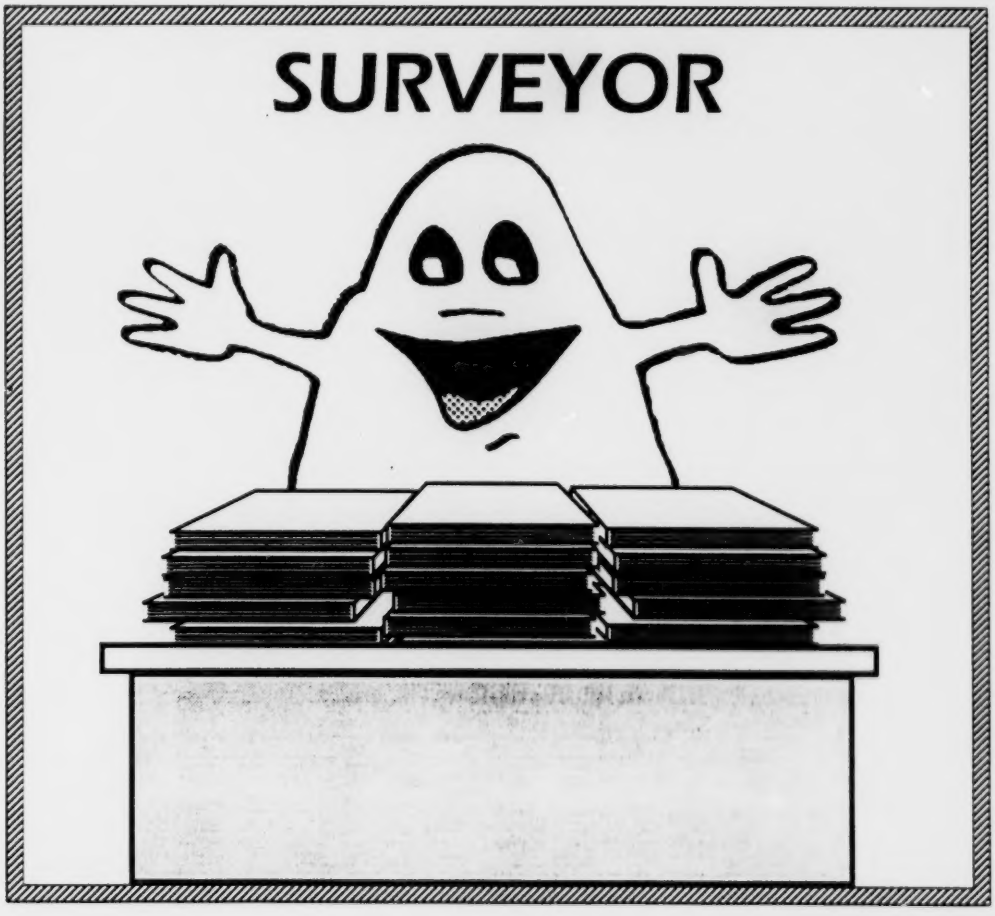
The task of analysis and drawing inferences will involve deep and critical thinking by all people watchers. They will no doubt begin by determining the extent to which their initial questions were answered through the observation process. On occasions, they may have generated numerical data that can be tabulated and analyzed. More often, their observations will result in descriptive pieces. Probing for meaning will be essential to the analysis task. What questions do the observations raise? What questions do they answer? Do these answers relate to the questions at issue?

Outcomes

The people watchers will report results, findings, and any inferences to the collegium. In the event of videotaping, the people watchers may wish to select a segment for sharing with the collegium. Because the people watchers will be dealing with perhaps the "softest" of all data, their major role in the collegium may be that of posing questions that emerged from their observations. Their questions and insights can serve as a "reality check" for collegial discussions.

SURVEYORS:

Roles and Responsibilities



Purpose

The surveyors will use quantifiable data to study the postulate under consideration. They may choose to collect perceptual data, that is, attitudes and opinions related to the postulate. Or they may choose to collect data about actual behaviors. Their job is to try to answer the following questions: What are the perceptions, attitudes, and opinions of teachers, students, parents, board members, and others related to this postulate? Do these opinions shed any light on whether or not this postulate is true? Do different role groups have different perceptions? Are any of these attitudes or opinions surprising—or contrary to what we "think" we believe about the postulate? How do behaviors match up with beliefs?

Methods

The surveyors will first need to determine what questions will help them "get a handle on" attitudes or behaviors related to the postulate. They need to decide who can best answer these questions: students, teachers, administrators, parents? Next, these investigators must decide how to get the questions answered. Will they need to collect data? How will they collect the data they need? Do data already exist that would be helpful? If the data exist, how will team members retrieve and analyze these?

Surveyors have four major tasks: (1) the development of an appropriate survey or the selection of an existing instrument; (2) the administration of the instrument; (3) scoring, tabulating, and summarizing the responses; and (4) analyses of data, looking for inferences that they might draw.

Outcomes

Quantifiable data are the raw material this investigatory team will bring to the collegium. These data will represent an important type of evidence for the collegial group to consider as it proceeds with its evaluation of the postulate. To the extent that the surveyors succeed in gathering data that are rich and deep, the collegial group will be able to consider this important part of the picture: perceptions and attitudes related to the postulate. The inferences that are drawn from these data will be particularly important as referents for thinking about consequences and implications.

STORYTELLERS:

Roles and Responsibilities

Purpose and Focus

Those who choose to "wear this hat" have the opportunity to reflect on their own experiences, and to hear about the experiences of colleagues. They seek stories that: describe a poignant moment or a critical incident, focus upon an achievement or disappointment, distill an ageless principle or truth, or focus upon a simple technique or renewed understanding.

Methods

How should storytellers go about gathering the raw material for their stories? By talking around. They may want to begin by reflecting on personal experiences and crafting stories of their own. They could begin interviews with colleagues by simply asking if the postulate calls to mind a story they would be willing to share.

The storytellers collect as many stories as they can, but at least three or four stories before the collegium. Encourage each member of the collegium to share one story or more. The idea is to develop a tapestry of experience that sheds light on the given postulate. Stories come out of an oral tradition, so it is better to tape-record them as they are told than to solicit written stories. Or, storytellers can take notes on the stories for purposes of remembering and retelling.

What exactly constitutes a story? Storytellers should collect a real "mixed bag" of narratives. It is important that each story have a point to make about the postulate. Beyond that, the following ingredients make for good stories: a description of the setting for the event, incident, or anecdote; a feeling for the characters involved; and the development of a plot or story line. There really is no formula for these stories. The best ones "tell well," that is, they are interesting, pointed, and as a result, memorable.

How should the storytellers analyze the stories they gather? When they meet to talk about and analyze the stories they have collected, the storytellers should attempt to identify recurring themes, morals, messages, heroes and heroines, or other outstanding features of the collection. They may also wish to give each story a brief title. They should identify stories that they'll want to feature in their report to the entire collegium. Further,

they should decide who will tell each of these stories—the original author or a member of the storytelling group. Another idea is to compile a comprehensive listing of stories and contributors to share with the collegium. This list could be written on newsprint and posted for others to copy or printed for distribution. Time will not permit the sharing of all stories during the collegium. Encourage members to exchange stories informally on their own time.

Outcomes

How should the storytellers record and report the stories and their meanings? As stated above, the storytellers will decide which stories to feature during the collegium meetings, which to reference, and who will be responsible for each part of the reporting. During the collegium meeting, storytellers should listen carefully as other action research teams share their findings. Storytellers can weave in their tales at appropriate times to reinforce a particular point in a powerful manner. Additionally, should they sense a connection between an untold story and a line of discussion during the collegium, they should be ready to ask the author of the story to share. The storytellers should also be facilitator in the sense of encouraging their colleagues to share stories that spontaneously occur to them during the collegium or afterwards. Storytellers incorporate these new stories into their chronicles. Stories can stimulate the sense of connection between individuals, the realization that, "Aha! I've had a similar experience."

Teachers' Stories: Our Ways of Knowing

By sharing stories about their classroom experience, teachers not only gain insight into their own practice, but they also contribute to the storehouse of knowledge about teaching.

MARY RENCK JALONGO

Consider for a moment how other professions use stories, not just as casual conversation, but as tools for professional growth. In medicine, stories are case histories; in law, stories set legal precedents; in business, real and hypothetical stories become scenarios. Experts from every walk of life organize their specialized knowledge and skill into episodes, events, or cases (Bruner 1988, Carter and Doyle 1989). Among the social sciences, education alone remains reluctant to share and value the stories that give form and meaning to our lives as educators. We need to use stories as other professional fields do, to treat stories as "little factories of understanding," using them to "attract and light up everything relevant" in our professional lives (Hughes 1988). Educators' stories about teaching and their reflections upon them are a deceptively simple way of addressing significant issues about what it means to teach and to learn (Frederick 1990, Schon 1983).

The Power of the Narrative

Our technological society's insistence on "hard data," facts, and empirical research would tend to suggest that the story is an inferior way of knowing — narratives are "soft," subjective, and ungeneralizable. But there is nothing to be gained by creating artificial dichotomies between these two very different, yet complementary, ways of knowing (Abbs 1984, Bogdan 1980, Calderhead 1987). Almost to a person, the best people in our field have learned to allow their scientific and narrative modes to interact. As Sutton-Smith (1988) points out,

> The narrative mode has little to do with objectivity, predictors, and verifications; rather, it has to do with consensual support, impartial readings, and verisimilitude. The science that derived from physics and mathematics is a science of verification; the science that derives from linguistics and narratives is a science of interpretation (pp. 22-23).

An Act of Mind

Stories are "a primary act of mind," a basic way of processing information (Hardy 1977). Both children and adults find it much easier to remember and use material presented in story format rather than as a categorized list (Bretherton 1984, Egan 1986). If you doubt this is true, attend an all-day workshop and consider what you recall in any great detail by the end of the day or much later. Chances are, it is a personal anecdote shared by a workshop leader or a participant.

It used to trouble me that whenever I encountered former students, they would invariably remark on my stories about children rather than the theories or research I was trying to convey. But now I have come around to Seymour Papert's (1990) perspective on learning:

> Understanding learning is my lifelong passion . . . . But interestingly I find that what helps most is not the proliferation of abstract principles. I gain more by extending my collection of "learnings" — concrete learning situations that I can use as "objects to think with" (p. ix).

I now believe that the teaching stories I chose to share with students served their purpose. Those stories and our reflections upon them have been and continue to be "good things to think with."

The Story Is You

Susan Ohanian (1989) once observed, "The more I teach, the more I realize that we teachers are nothing but our anecdotes, our reflections on experience." As teachers, we become the stories we choose to tell. If our personal narratives are primarily celebrations of student learning, we have high expectations for students; if the stories we choose to tell about teaching are little more than petty complaints, we have grown dull and apathetic; or, if our personal narratives are mainly tales of despair, we are "burned out" and in desperate need of renewal. This happens because personal narratives are a way of

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"structuring experience itself, laying down routes into memory, for not only guiding the life narrative up to the present but directing it into the future . . . a life as led is inseparable from a life as told . . . a life is not 'how it was' but how it is interpreted, told and retold" (Bruner 1988). Stories about teaching enable us to organize, articulate, and communicate what we believe about teaching and to reveal, in narrative style, what we have become as educators.

Contributions to Professional Growth

Professional growth is more like finding our way through a forest than driving down a freeway; each of us must find our own path to professional fulfillment. Teacher stories contribute to that process of discovery.

Teachers' Stories Invite Reflection

One thing that differentiates reflective practice from routine practice is the number, richness, and flexibility of the "scripts" teachers bring to the classroom setting (Schön 1983, 1987, 1991).

Stories about teaching enable us to organize, articulate, and communicate what we believe about teaching and to reveal, in narrative style, what we have become as educators.

As a teacher educator, I sometimes hear a veteran teacher complain that a novice teacher "just doesn't have common sense." Professional educators' common sense derives, not from rote memorization of many precise pieces of information, but from the stories used to make all those bits of information cohesive and relevant. Reflective practitioners have "common sense" precisely because they have a storehouse of stories that organize, apply, and interpret what they know about teaching (Shafer 1981). Figure 1 suggests specific strategies for using stories to encourage more reflective teaching.

Teachers' Stories Are a Metaphor for Change

Stories are not crystallized; they are fluid. As stories evolve, they sometimes seem to take on "a life of their own. New revelations of meaning open out of their images and patterns continually, stirred into reach by our own growth and changing circumstances" (Hughes 1988, p. 35).

As an illustration of the dynamic quality of narratives, consider this story that Krista, a preservice teacher, shared with a class of student teachers after her initial meeting with a small group of 1st graders:

> I was handing out construction paper and giving the children their choice of color when this child shouted, "I want black. Black is superior. Black is always superior."
>
> I thought, oh boy, I am really going to have problems with this one. I just never thought people had those racial attitudes so *young*.

One of the teachers in the group asked Krista if she would have made the same inferences about racial attitudes if the child had been white and had said, "I want white, white is

(continued on p. 48)

FIGURE 1

A Dozen Story Ideas*

1. **Reflections on Improvement** (Chism 1990)
   The change I made
   What prompted the change
   The impact of that change and how I assessed it
2. **A Metaphor for Myself**
   What best symbolizes you as a teacher?
   What are the features that unify your self and the symbol you selected?
3. **At Least . . .**
   Generate a series of statements about making the best of a bad situation in your professional life (Our district may be in a budget crunch, but at least I . . .)
4. **Joyful Moments**
   Make a list of the most joyful moments in your professional life
5. **Imaginary Dialogue**
   Write an imaginary dialogue between yourself and the school, an administrator, a colleague, a parent, or a child
6. **Unrevealed Kindnesses**
   Write about a situation where you went above and beyond the call of duty to help a child in distress
7. **Remembrances**
   Reflect upon your own experience as a child at school. Write about an incident from your childhood that has enabled you to develop greater empathy for the children you now teach
8. **Low Points**
   Describe an incident that nearly caused you to abandon the teaching profession. Looking back on it, why was this such a critical incident?
9. **Heights and Depths**
   Write about your most and/or least successful learning experiences
10. **Memorable Teachers**
    Profile the best and/or worst teacher you ever had
11. **Packing Decisions**
    If you were invited to teach overseas and knew that your teaching resources would be very limited, what would you pack in your suitcase? Compare/contrast your choices with those of other teachers. What do your choices reveal about you as a teacher?
12. **Looking Back**
    Contact a former teacher you admired and interview him or her. What insights did you gain about the teacher? About yourself?

* Items 2-6 adapted from Cooper (1991)

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Classroom Chronicles: So Now Do You Know the Real Story?

MARGE SCHERER

Ask teachers what they remember about their first year of teaching, and the stories tumble forth. One teacher remembers being so controlling of his students that they were afraid to step out of line, while another remembers ignoring bad behavior to the extent that her students' animal noises drowned out her book discussions.

One teacher looking back recalls that he once threw his desk in a fit of anger over his students' lack of motivation. Forever after, he had earned himself the nickname Geyser. Another teacher calls to mind the day her desk was strewn with flowers. Her students — whom everyone else called "the retards" — were saying thanks for believing in them.

A good number of teachers reminiscing about their year as a neophyte remember, although not always by name, the fellow teacher, principal, or department chair who joked or counseled them through their rookie year. Not surprisingly, for many career teachers, the memory of their entire first year can be evoked by one student's name — the David, Leo, Adrianna, whose life touched their own in some lasting way.

In *The First Year of Teaching: Real World Stories from American Teachers*, Editor Pearl Rich Kane collects 25 of such stories. Chosen from more than 400 submitted in a nationwide contest called "In The Beginning," the essays chronicle "the pivotal decisions, the lessons learned, the dramatic, poignant and funny incidents" that make up teachers' experiences. While each is specific and unique, collectively the stories reveal realities of classrooms that experienced teachers will recognize and beginning teachers will appreciate.

The book sheds light on some educational issues worthy of reflection: the difference between the way men and women approach teaching; the moral dilemmas teachers face in the classroom (from plagiarism to racism); and, most problematic, the effectiveness of teacher training. Interestingly, for all the teachers who lament that their preservice texts and training didn't adequately prepare them, an equal number pay tribute to the educational strategy, psychology, or philosophy that guided them through the early days.

Finally, the stories remind readers how different teaching is from other professions. As Kane writes in her introduction, "Indeed, few other jobs offer the immediate challenge, the magnitude of responsibility, or the potential for intrinsic satisfaction and learning that teaching in an elementary or secondary school affords from the first day of employment."

Available from Walker and Company, 720 Fifth Ave., New York, NY 10019, for $10.95 (paper).

Five Teachers' Lives

A Lifetime of Teaching: Portraits of Five Veteran High School Teachers is another story collection — one organized with a question in mind. Author Rosetta Marantz Cohen wants to know: What does the life of a successful teacher look like?

Her narrations probe the chronology of five teachers' lives, their early influences, outside interests, family situations, and, most of all, the kind of teaching that built their reputations among students and colleagues as successful, even outstanding, teachers.

The teachers — seen inside and outside their classroom — aren't extraordinary, and their lives aren't what is remarkable about them. Cohen's conclusions about what these teachers have in common, however, provide insight into the elusive art of teaching.

First, they feel passion for their subject. From English literature to all things French, what they teach is a life enthusiasm, one they impart to their students with fervor.

As for teaching style, "though all these teachers from time to time nod in the direction of the most current research on effective teaching," Cohen writes, "their styles remain independent of policy and prescription."

Carl Brenner, who knows mathematics well enough to have written his own textbook series, embraces the questioning approach. "Could you do it another way?" and "Convince me," said in the most challenging tone he

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can summon, are his favorite ways to rock his students out of complacent thinking.

On the other hand, science teacher Lily Chin collects teaching objects — models, manipulatives, a menagerie of classroom animals, and much hands-on junk — anything to hone her students' process skills of observing, classifying, measuring, controlling, communicating.

Bill Salerno is adept at story-telling. His power to command the attention of his listeners and manipulate emotions makes him a masterful teacher of literature.

That these teachers also have in common originality, a kind of idiosyncratic genius, and even "legendary weirdness" (in the words of their students) should come as no surprise to those of us familiar with "teacher literature" and "teacher television" featuring the likes of Miss Jean Brodie, Mr. Novak, and Jaime Escalante.

Two commonalities Cohen uncovers about the veterans, however, counter current educational theory. These teachers are *not* student-centered in their classrooms, and, furthermore, their stage of ego development looks to Cohen more like "the persistent novice perspective" than the mature stage of the selfless teacher.

These expert teachers aren't afraid to admit they that they teach for themselves as much as for their students. Indeed in every case, Cohen writes, "the subject's classroom functions as a kind of stage on which a variety of needs can be asserted and worked through — the need for applause, the need for control, the need for expressing personal talents or interests." Consciously or unconsciously, in their pursuit of self-actualization, "they all seem to believe that if the teacher's needs are satisfied, the students will ultimately benefit."

So what do these portraits of sometimes fiery, often skeptical and battle-wise teachers reveal to readers about effective teaching? Cohen concludes that the educational establishment ought to widen its definition of good teaching. Is it not ironic, she asks, that "contemporary education, which is so preoccupied with learning styles and individual differences among students, perceives the needs of teachers to be so uniform?"

As for the implications for teacher training and professional development, "the input and active involvement of veteran teachers are imperative. . . . Defining and articulating the classroom philosophies that have governed their careers would encourage them to examine those philosophies in ways they have not done before. What is more, their involvement in the teaching of new recruits would enhance their careers without making them leave the classroom."

These deductions might seem obvious except for the fact, as Cohen mentions at the end of the book, "not once in the course of their careers were these teachers ever asked what they do and why." It seems high time the stories were told. □

Available from Teacher's College Press, Columbia University, New York, NY 10027, for $15.95 (paper).

Marge Scherer is Managing Editor of *Educational Leadership*.

(continued from p. 46)

always superior."

"Maybe not," Krista admitted, "maybe he just wants attention." Several weeks later, Krista shared with the class a different viewpoint about this child:

> Yesterday, I was teaching a lesson on the concept of celebrations. At the end, I asked the children to draw a picture and tell a story about a celebration they had experienced.
>
> This little boy said, "No! There ain't no celebrations at my house since my baby sister died."
>
> I found out that his sister had just died of leukemia. Next time, I won't be so quick to judge. I'll learn to focus more on the child and less on my own problems.

The world we know is the world we make in words, and all we have after years of work and struggle is the story.

When I shared this story with a group of students, some were quick to judge Krista. Rose remarked, "I'll bet she felt ashamed." But when Rose had a personal experience with misinterpreting a child's behavior, she quickly recognized the similarities:

> On the first day of my summer school class, Joey came into my classroom, slumped in his chair, folded his arms across his chest, and mumbled obscenities. I took him aside and he stopped cursing.

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but he remained uncooperative for several days.

Later, Joey confided that he knew he was going to have "a really mean" teacher next year in 3rd grade and that he had been afraid that summer school "would be the same." Evidently, the cursing was his way of defending himself.

Rose realized that "just as in the story you told about the boy whose sister had died, I was worrying about what *I* was going to do instead of wondering *why* is this kid behaving this way?"

To see how stories become metaphors for change, notice how the same story was interpreted and reinterpreted. For Krista, what began as a "racial incident story" ended as a "becoming a more child-centered teacher story." For Rose, it was a story about a mistake she could not imagine herself committing. Yet later, she realized the issue was the same one she faced.

The same story not only encapsulates the transitions made by those directly involved but also transcends the boundaries of time and space when it is shared with others. That is because "a story is something happening to someone you have been led to care about . . . whatever its subject matter, every story is about change" (Shulevitz 1985, pp. 7, 47).

Teachers' Stories Promote the Ethic of Care

Asked about their concerns as preservice teachers, one student, Teri, responded, "Maybe this sounds funny — but I worry about caring too much, about children's problems 'getting to me.' "

Teri's comments prompted me to share the following story about April, a kindergartner:

> The first child I noticed in the class was April. She looked neglected and seemed desperate for approval. I had seen April's teenaged mother pick her up at school once, but April's grandparents, who were openly resentful about having to care for her, appeared to be in charge.
>
> I was in the classroom one day as the children were getting ready to lie down on carpets for "quiet time." A classmate asked sarcastically, "Hey, April, where's your rug?" and another answered, "She probably doesn't even have one."
>
> April responded by making a funny face and dancing around wildly. When the derisive laughter faded, April walked over to the sink and pulled a handful of paper towels from the holder. Then she unfolded the paper towels, spread them out on the tile floor, and curled up on top of them in an awkward fetal position. I couldn't stand it. I started to cry. April's teacher seemed oblivious to this dramatic Friday afternoon event.
>
> That weekend, I discussed the incident with my family. Almost before the story ended, my young nieces were rummaging through the linen closet. They thrust a small carpet into my hands. "Here. Take this to school and give it to her," they said. "If you're worried that the teacher will get mad, don't let her see you."

Personal narratives can reveal the nurturing dimension of the teaching role, characterize important changes in our professional lives, and encourage more reflective practice.

Teri responded to this story. She told me it "really helped me to feel it's okay to be sensitive and it's reasonable to take action." The story of April was a better response to Teri's concern than any other reason I could formulate. It was better because it demonstrated the ethic of care that must dominate our profession (Noddings 1984, Witherele and Noddings 1991).

When I shared the story with experienced teachers, they spoke — many of them for the first time in their professional lives — about "unrevealed kindness," things they had done for children without any expectations of reward or recognition. To me, that ethic of care and stories about it are like the mast of a ship on a turbulent sea: we lash ourselves to it as a defense against incessant waves of change for change's sake and gales of criticism. Stories remind us of the reasons we went into teaching in the first place.

"All We Have Is The Story"

Personal narratives can reveal the nurturing dimension of the teaching role, characterize important changes in our professional lives, and encourage more reflective practice. All of these benefits have a direct impact upon professional growth because "our lives are made of stories. Such stories allow us to explore our lives, to try out alternative possible ways of acting and being in the world, and indeed to help shape our future actions" (Kazemek 1985, p. 201).

Personal narratives are not superfluous features of teachers' lives; they are basic to our professional growth. Ultimately, "The world we know is the world we make in words, and all we have after years of work and struggle is the story" (Rouse 1978, p. 187). □

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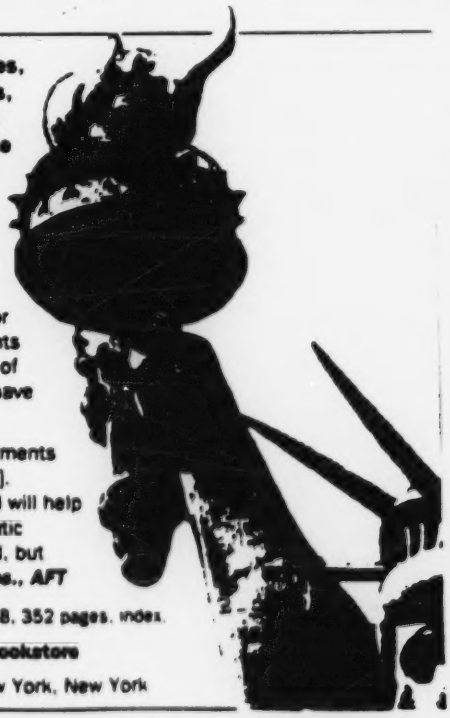

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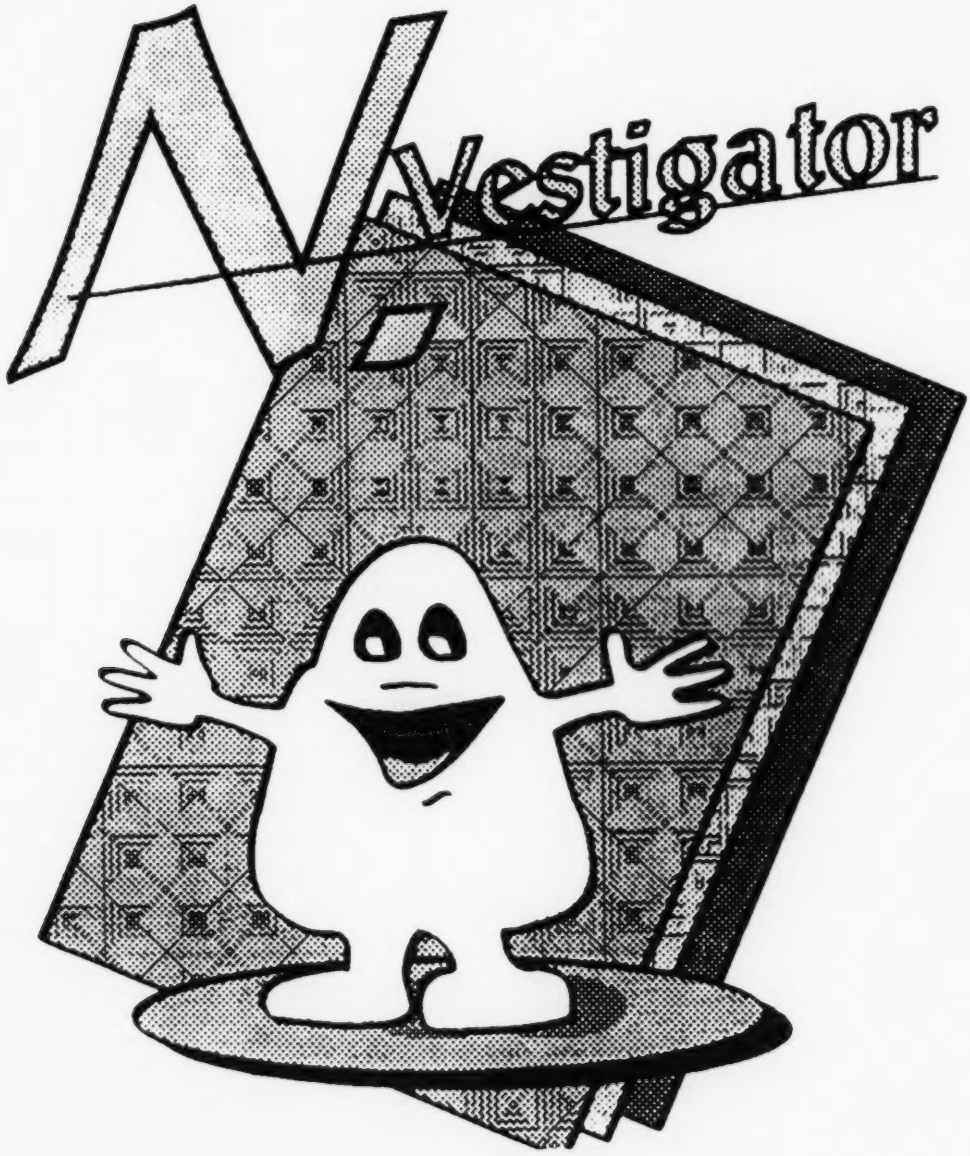
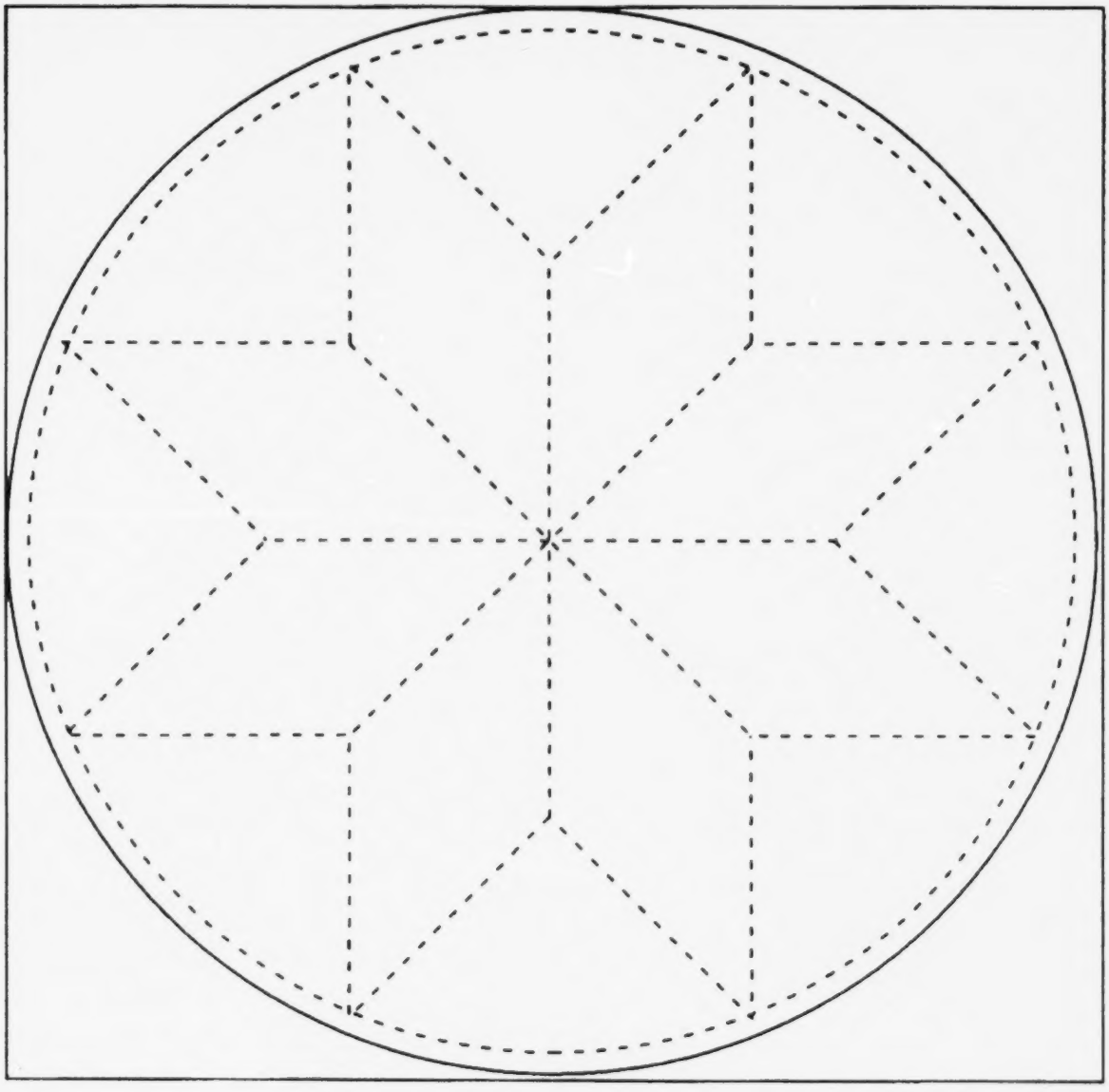
Investigator's Notes





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CONCEPTS:	POINT OF VIEW:
INFERENCES/ CONCLUSIONS:	CONSEQUENCES/ IMPLICATIONS:

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The principal goal of education is to create men who are capable of doing new things, not simply of repeating what other generations have done—men who are creative, inventive, and discoverers. The second goal of education is to form minds which can be critical, can verify, and not accept everything they are offered.

—Jean Piaget

It is better to know some of the questions than all of the answers.

—James Thurber

The only reasons some people get lost in thought is because it's unfamiliar territory.

—Paul Fix

Get your facts first, then you can distort them as you please.

—Mark Twain

All genuine learning is active, not passive. It involves the use of the mind, not just the memory. It is a process of discovery in which the student is the main agent, not the teacher.

—Mortimer Adler,
The Paideia Proposal

When Darwin, one of the most honest of scientific thinkers, was speculating about the origin of species, he used to keep special notebooks in which he would immediately write down any objection to his theories which occurred to him. He found that, if he did not do this, his mind had a habit of forgetting all the objections. For the objections introduced disharmony into his mind; and his mind pushed them out again as quickly as possible.

—B. A. Howard

Thinking is talking to yourself and following certain rules for doing so.
—Edgar Dale